

Figure 1

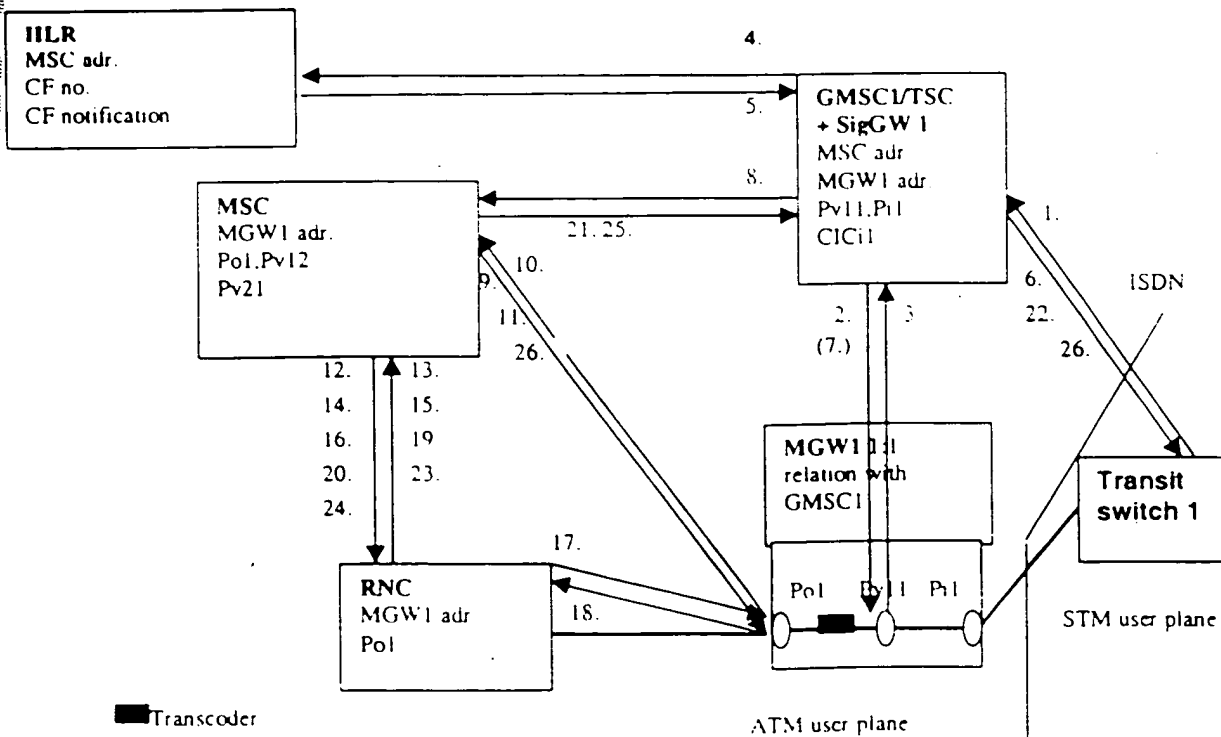


Figure 2

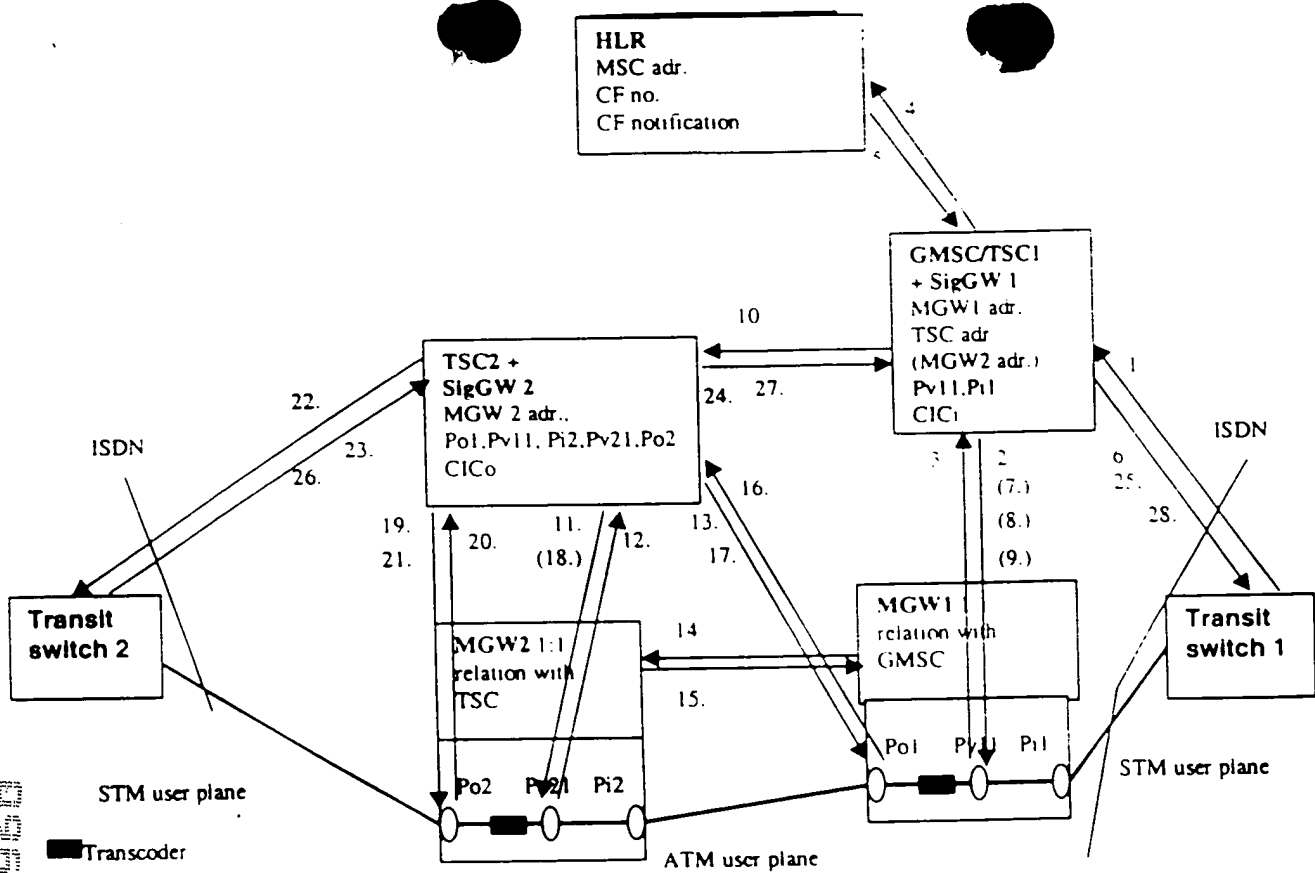


Figure 3

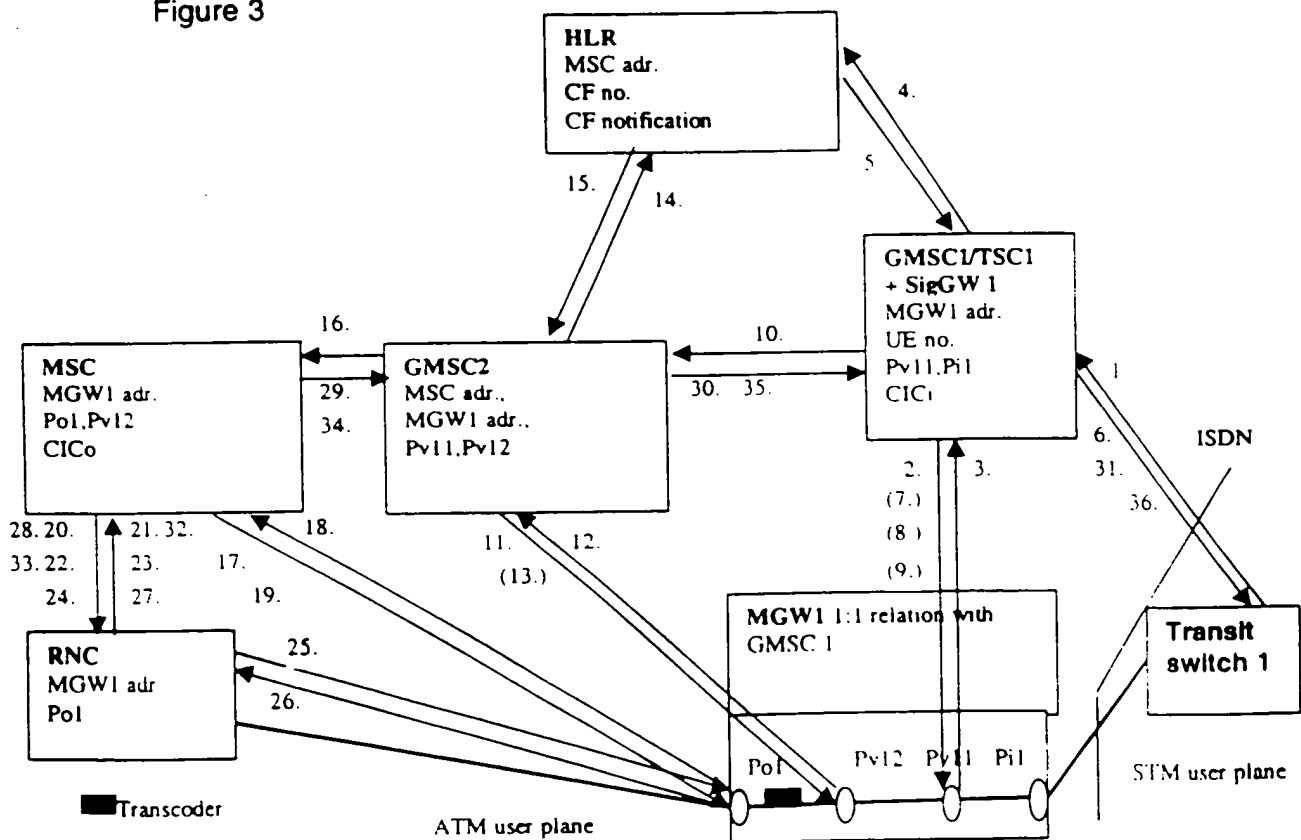


Figure 4

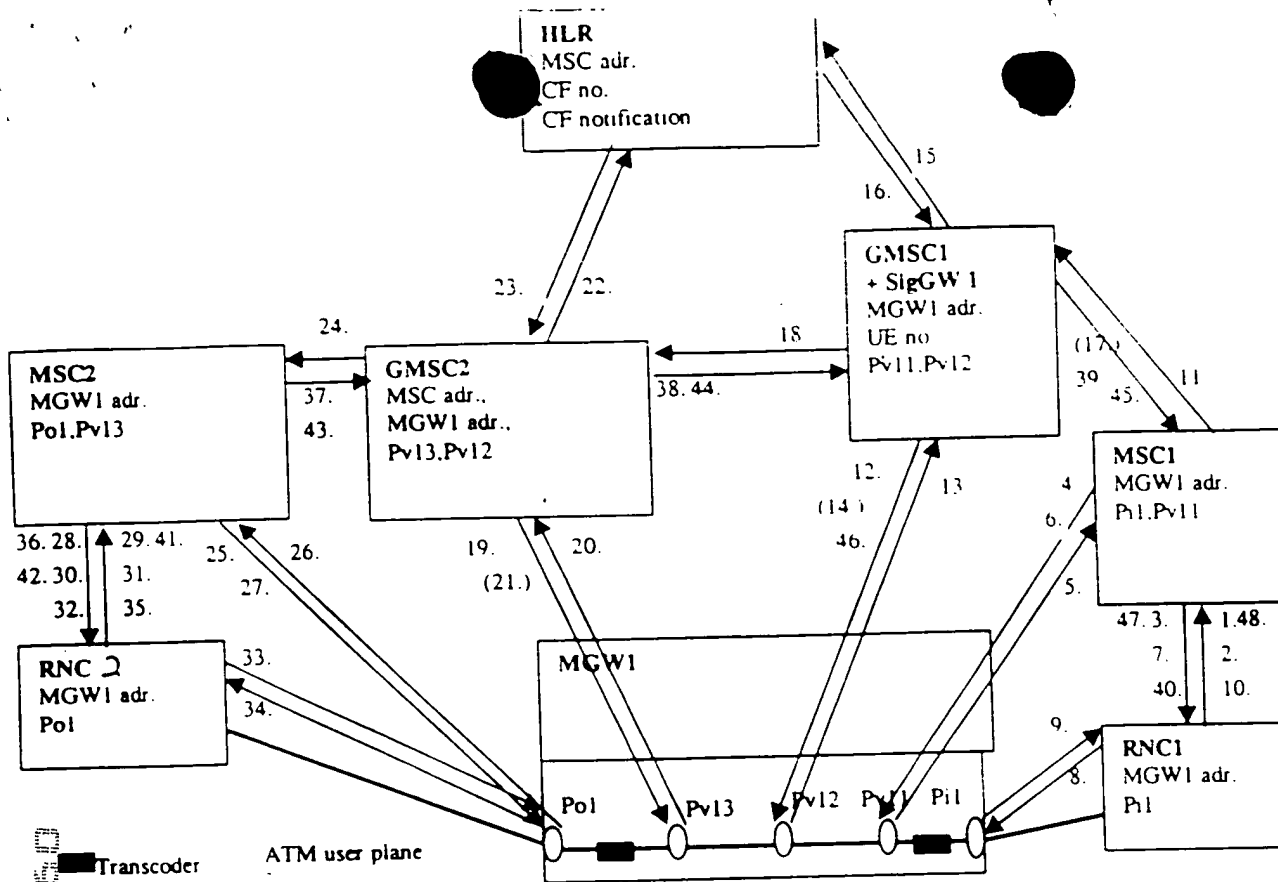


Figure 5

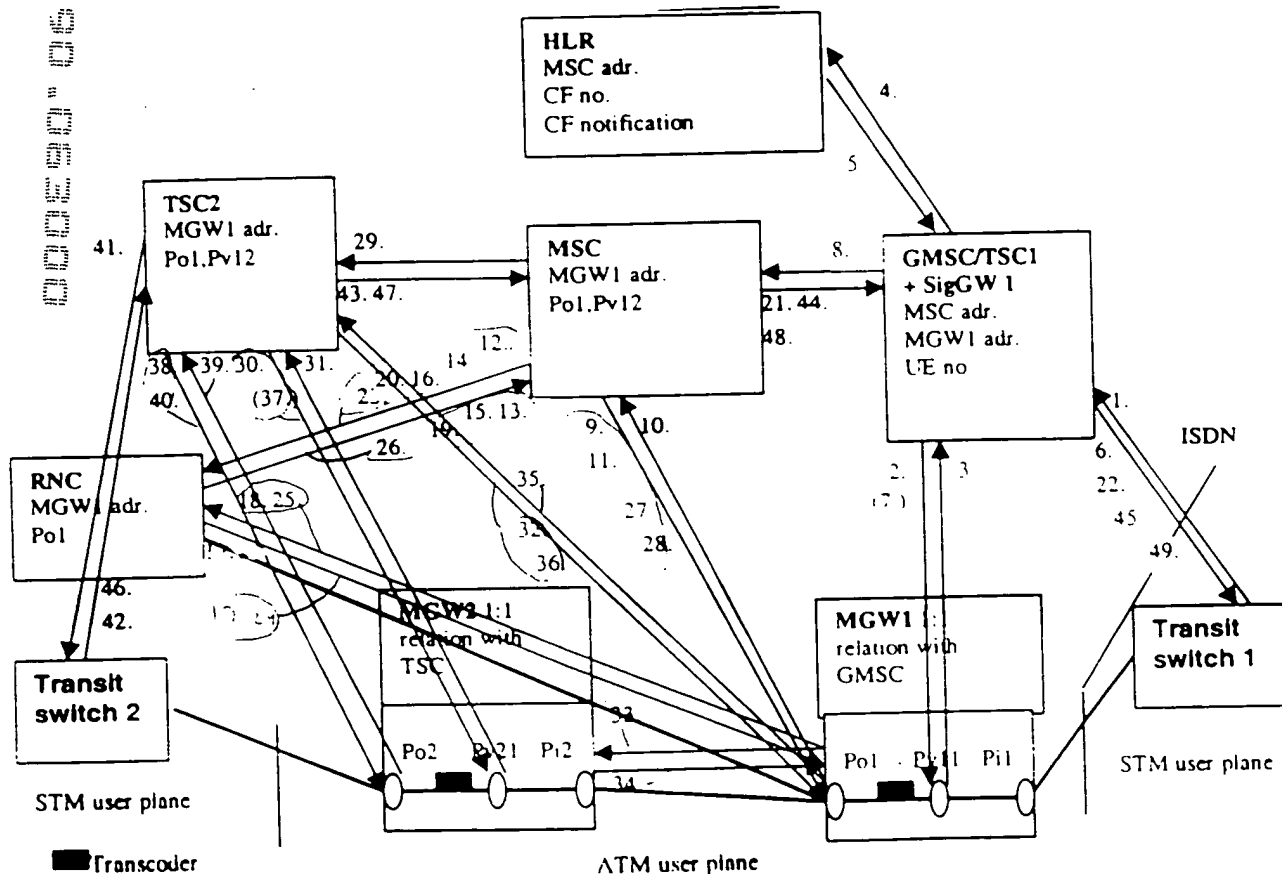


Figure 6

The diagram illustrates a network architecture for a mobile communication system, showing the interaction between various components and the flow of signaling and user plane data.

**Components:**

- HLR (Home Location Register):** Contains MSC address, CF number, and CF notification.
- MSC (Mobile Switching Center):** Contains MGW1 address, Pol, Pv12, and Pv21.
- RNC (Radio Network Controller):** Contains MGW1 address and Pol.
- GMSC1/TSC + SigGW 1:** Contains MSC address, MGW1 address, Pv11, Pi1, and CICI1.
- MGW1 1:1 relation with GMSC1:** Contains Pol, Pv11, and Pi1.
- MGW2 1:1 relation with GMSC2:** Contains Po2, Pv21, and Pi2.
- GMSC2 + SigGW 2:** Contains MSC address, MGW2 address, Pv21, Pi2, and CICI2.
- Transit switch 1** and **Transit switch 2**.

**Signaling and User Plane Connections:**

- Signaling Plane:**
  - HLR to GMSC1/TSC + SigGW 1 (4).
  - GMSC1/TSC + SigGW 1 to HLR (5).
  - GMSC1/TSC + SigGW 1 to MSC (8).
  - MSC to GMSC1/TSC + SigGW 1 (21, 25, 47).
  - MSC to RNC (9, 10, 11).
  - RNC to MSC (13, 15, 19, 23, 55, 39, 54, 41, 45, 38).
  - GMSC1/TSC + SigGW 1 to MGW1 1:1 relation with GMSC1 (2, (7), 3).
  - MGW1 1:1 relation with GMSC1 to GMSC1/TSC + SigGW 1 (6, 22).
  - GMSC1/TSC + SigGW 1 to MGW2 1:1 relation with GMSC2 (29, (33), 28).
  - MGW2 1:1 relation with GMSC2 to GMSC1/TSC + SigGW 1 (32, 44, 58).
  - GMSC1/TSC + SigGW 1 to GMSC2 + SigGW 2 (30, 31).
  - GMSC2 + SigGW 2 to GMSC1/TSC + SigGW 1 (34, 57, 43).
  - GMSC2 + SigGW 2 to RNC (52, 53).
  - RNC to GMSC2 + SigGW 2 (18, 51).
  - GMSC2 + SigGW 2 to MGW1 1:1 relation with GMSC1 (17, 60).
  - MGW1 1:1 relation with GMSC1 to GMSC2 + SigGW 2 (19, 50).
  - Transit switch 1 to GMSC1/TSC + SigGW 1 (1).
  - Transit switch 1 to MGW1 1:1 relation with GMSC1 (26).
  - Transit switch 2 to MGW2 1:1 relation with GMSC2 (27).
  - Transit switch 2 to GMSC2 + SigGW 2 (32, 44, 58).
- User Plane:**
  - Transit switch 1 to Transit switch 2 (48).
  - Transit switch 1 to MGW1 1:1 relation with GMSC1 (STM user plane).
  - MGW1 1:1 relation with GMSC1 to MGW2 1:1 relation with GMSC2 (ATM user plane).
  - MGW2 1:1 relation with GMSC2 to Transit switch 2 (STM user plane).

**Legend:**

- Transcoder:** Represented by a black square.

Figure 7

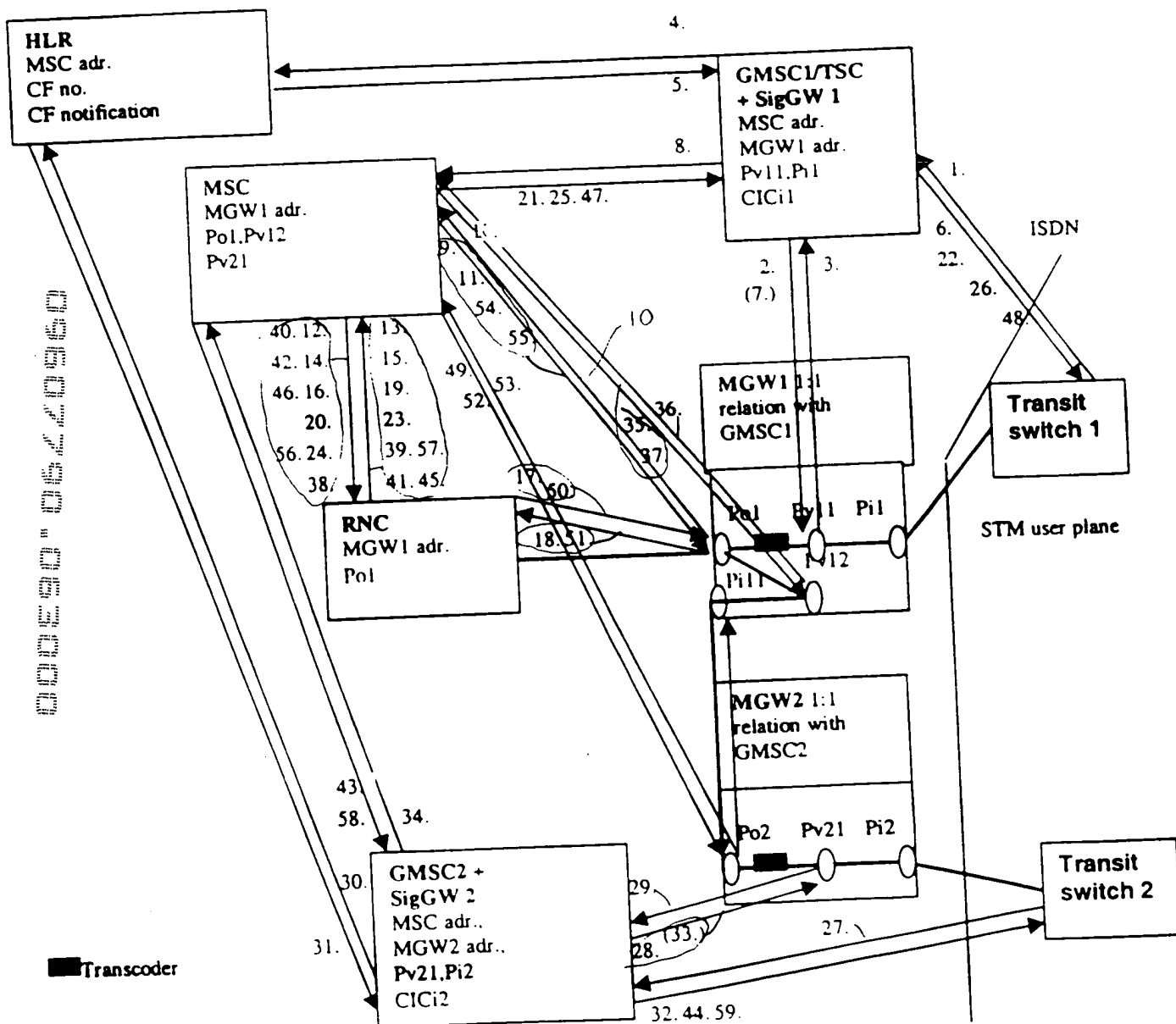


Figure 8

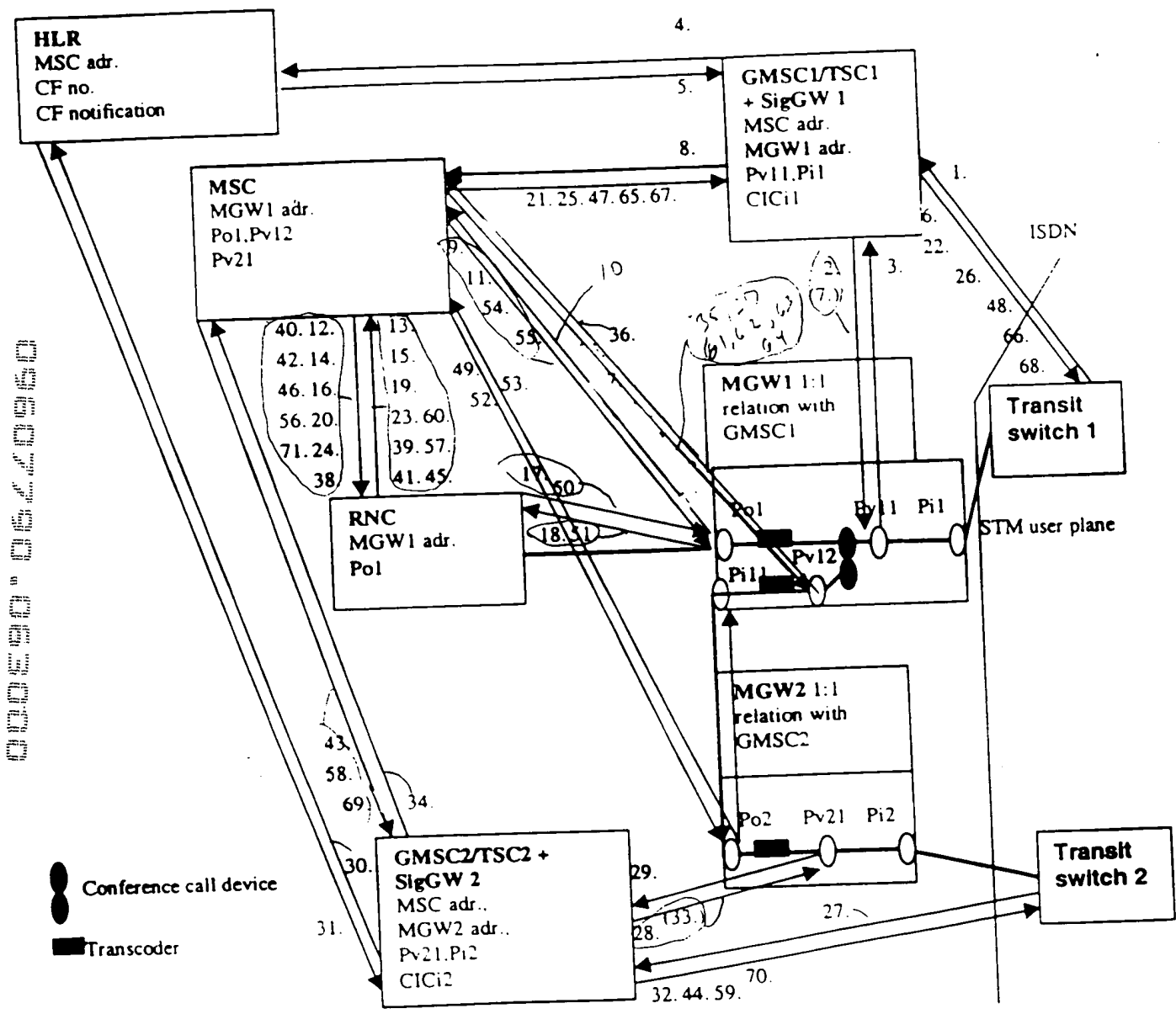


Figure 9

Figure 1: A schematic diagram of the proposed model. The input is a sequence of tokens  $x_1, x_2, \dots, x_n$ . These tokens are processed by an embedding layer to produce a sequence of embeddings  $z_1, z_2, \dots, z_n$ . These embeddings are then processed by a sequence of layers, each containing a self-attention mechanism and a feed-forward network. The final output is a sequence of tokens  $y_1, y_2, \dots, y_m$ .

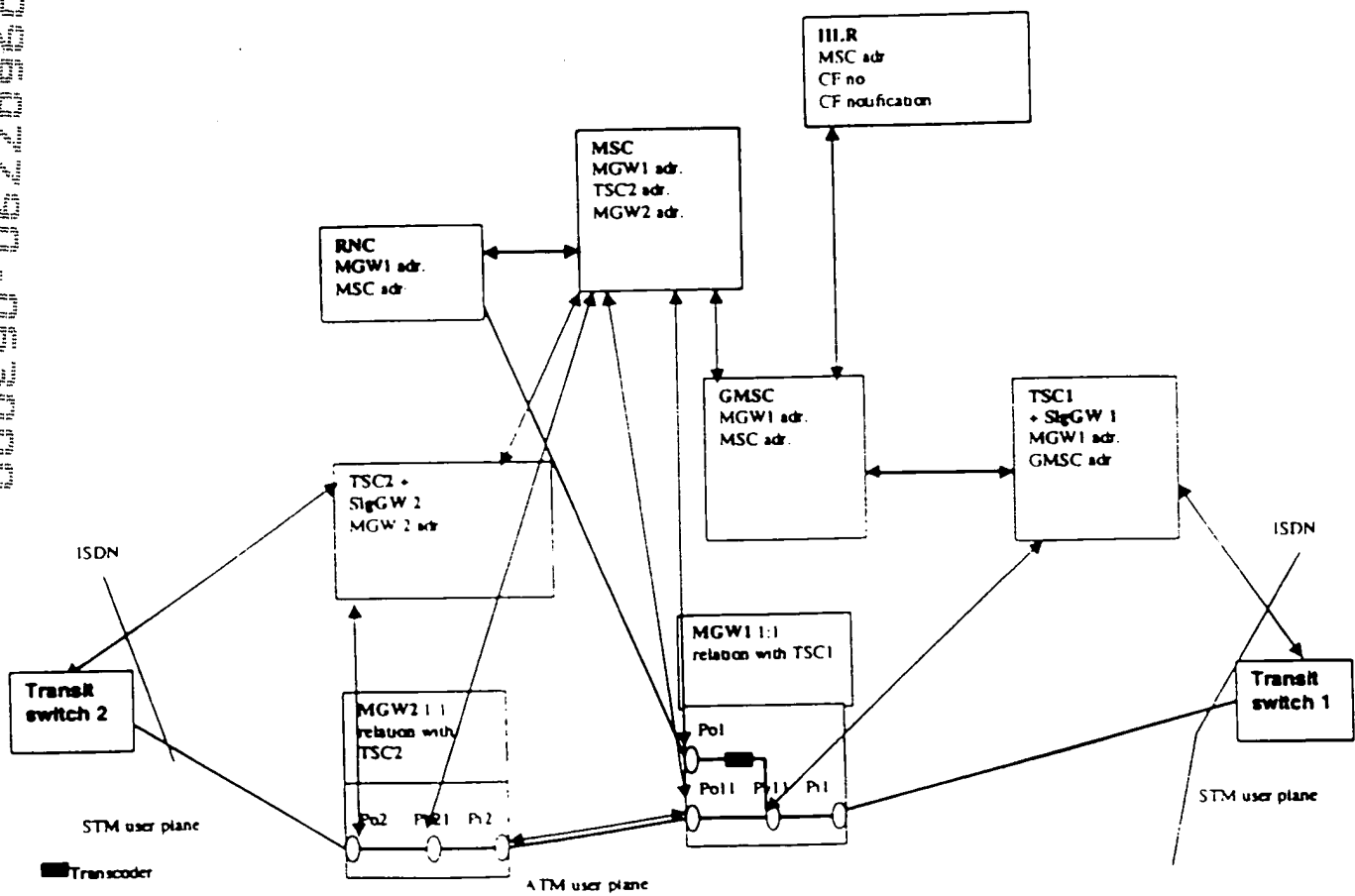


Figure 10

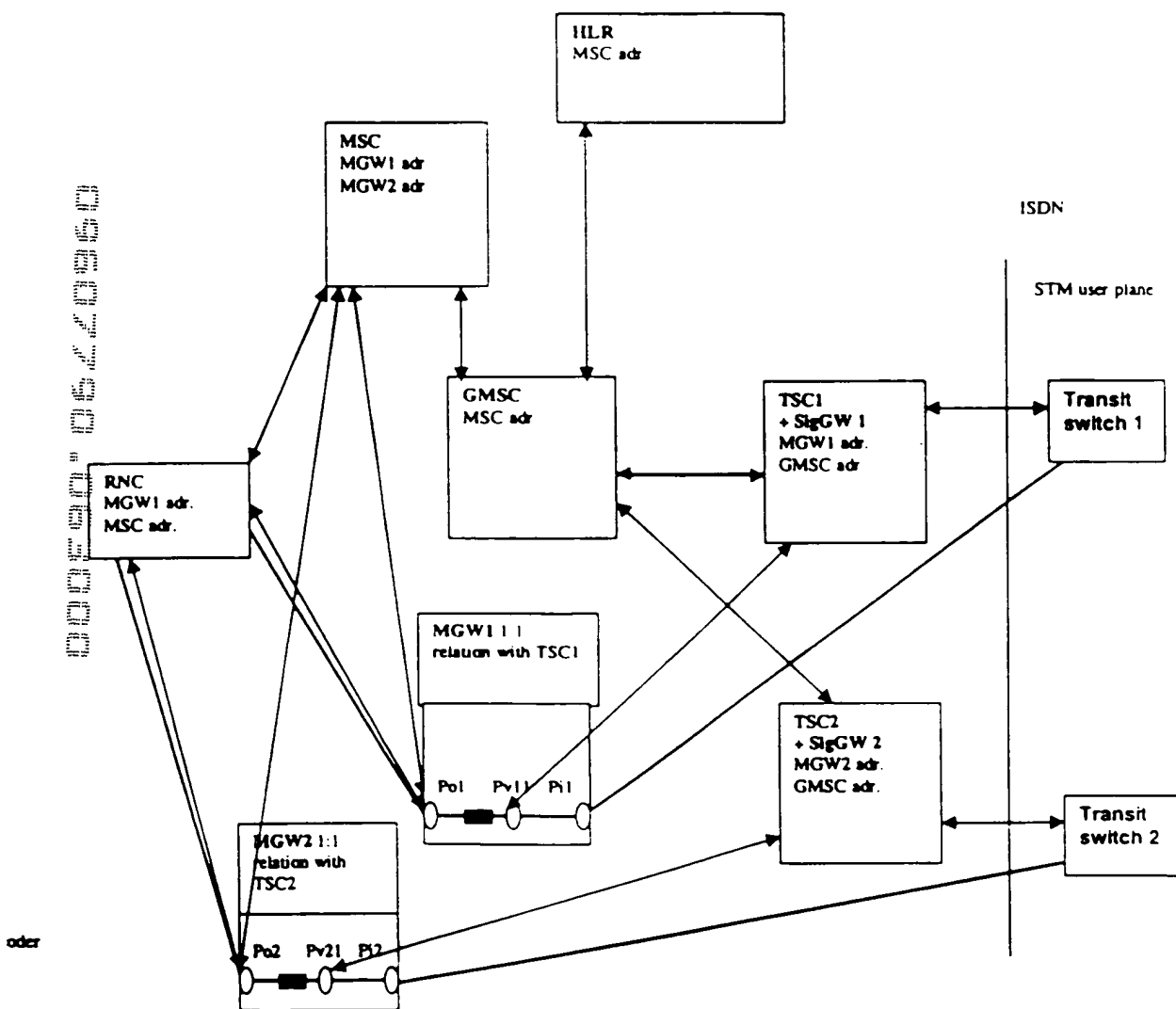


Figure 11



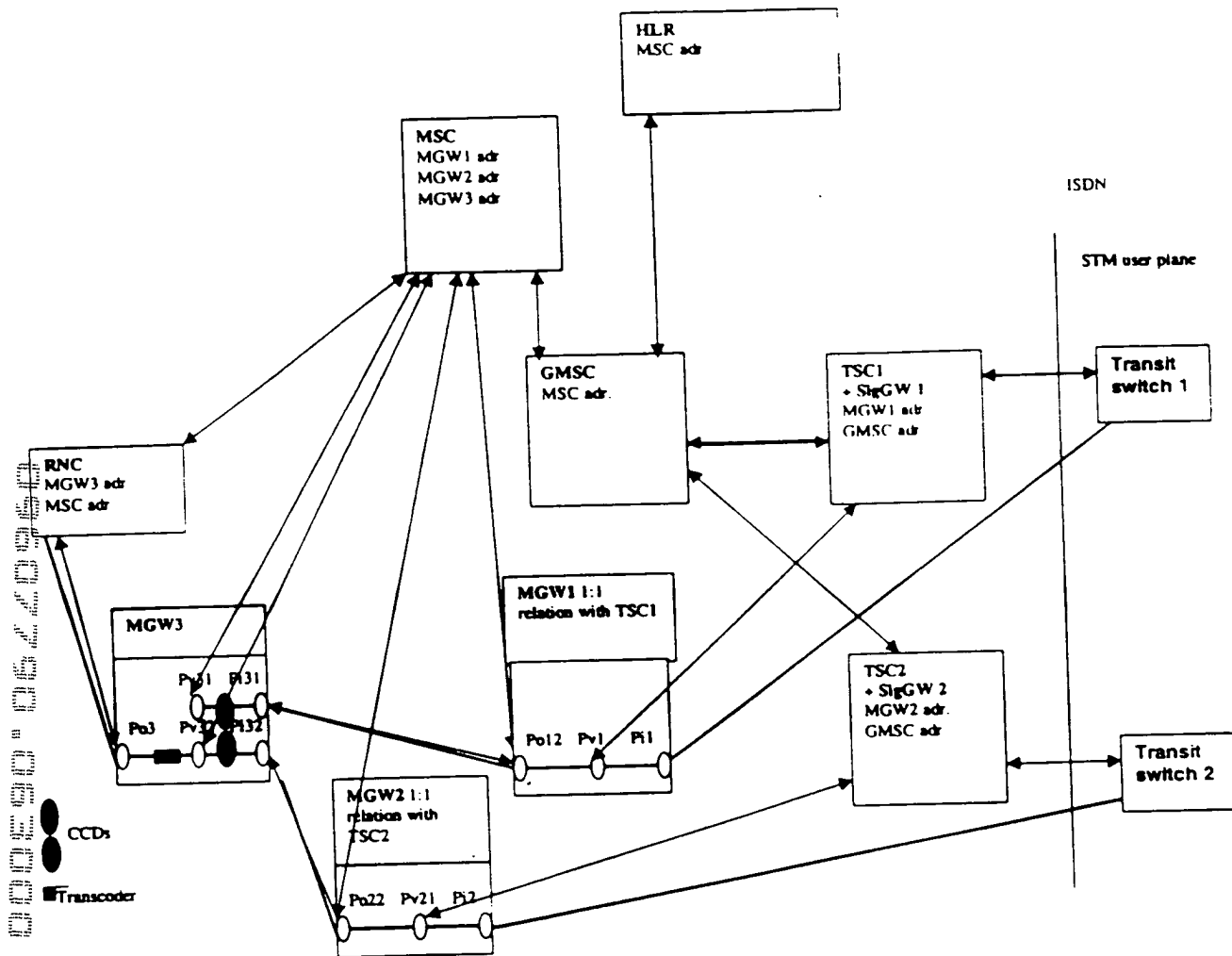


Figure 12